

# Defense Occupational and Environmental Health Readiness System

## Functional Briefing

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A product of the DoD Medical Health System (MHS)

# What is DOEHRS

- A web based solution
- A soon - to - be, world class, occupational exposure database system
- Supports data collection “out of the office” and subsequent data mining efforts.
- Provides the longitudinal exposure record for DoD employees
- A broad spectrum occupational exposure database:
  - Maritime and ship building activities
  - Industrial activities
  - Construction activities
  - Maintenance activities
  - Administrative activities
  - Military unique operations (deployments)

*DOEHRS is the Theater Medical Information Program (TMIP) capability for exposure data collection analysis and storage with respect to: industrial hygiene, environmental health, preventive medicine and radiation protection*

# Relationship of DOEHRS to TMIP & CHCS II

- DOEHRS provides information through line Command & Control systems to support commanders' Operational Risk Management (ORM) process. (TMIP)
- DOEHRS provides exposure information to health care providers (HCPs) to aid in medical diagnosis & treatment decisions. (CHCS II)
- DOEHRS delivers the long term exposure record for all personnel in most operational situations (DOEHRS Data Repository)

# DOEHRS CONOPS:

## Organizational Units

- Ashore
  - MTFs
  - Clinics
  - Stand-alone IH offices
  - Others...
- Functionality via TMIP
  - Forward Deployed Preventive Medicine Units (FDPMUs)
  - Afloat IHOs and PMTs
  - Aerospace Medicine Squadrons
  - Preventive Medicine Detachments
  - NEPMUs, CHPPM, AFIOH
  - Others...

# Primary, Individual users of DOEHRS (input)

## ■ Ashore

- Industrial Hygienists
- Industrial Hygiene Officers
- Bio Environmental Engineers
- Environmental Health Officers
- Environmental Science Officers
- Sanitary Engineer
- Related Technicians

## ■ Functionality via TMIP

- Industrial Hygiene Officers (IHO)
- Environmental Health Officers (EHO)
- Bio Environmental Engineers (BEE)
- Environmental Science Officers (ESO)
- Independent Duty Corpsman (IDC)
- Sanitary Engineer
- Related Technicians

# Users of DOEHRS Data

## ■ Medical

- Occupational medicine
- Epidemiologists
- Public health
- Reproductive health
- Primary care
- Oncology
- Hearing conservation

## ■ Research

- Researchers
- Academia
- CDC/NIOSH

## ■ Other

- Workman's Comp./Case Management

## ■ Installation

- Safety office
- Installation commanders
- Shop supervisors
- Emergency planners
- AT/FP managers
- Environmental office
- Emergency responders
- Facilities/Engineering

## ■ Military Operations

- Combatant commanders
- Joint Task Force surgeon
- Deployment Health Centers

# Similar Exposure Group (SEG)

- ◆ Critical Element of Detailed Workplace Exposure Assessments
  - ◆ Groups of Employees who have Common Risks and Similar Exposure Profiles
  - ◆ Identified by Similar Substance, Workplace, and Exposure Factors:
    - Contaminant(s)
    - Organization(s)
    - Worksite(s)
    - Job Title(s)
    - Process(es) or Task(s)
    - Exposure Levels
  - ◆ Result = Predictable Exposure
- Ashore (example)
    - Personnel performing soldering operations -lead exposures.
  - Deployment (example)
    - Base camp - Camp x-ray, all personnel who live in the base camp -environmental exposures

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**Basic building block of group exposure evaluations**

# DoD Exposure Data

- DOEHRS will contain records of workplace exposures to identify health risks, protective measures the employee can take, and information for health care providers.



# Support To Clinic Operations (patient encounters)

- DOEHRS will provide patient workplace exposure data for making informed treatment decisions, similar to data from clinical laboratories and radiology.



# Benefits For The Individual

- DOEHRS data is essential to making informed decisions about controlling each exposed person's health risk., and for health care providers making medical surveillance and treatment decisions.



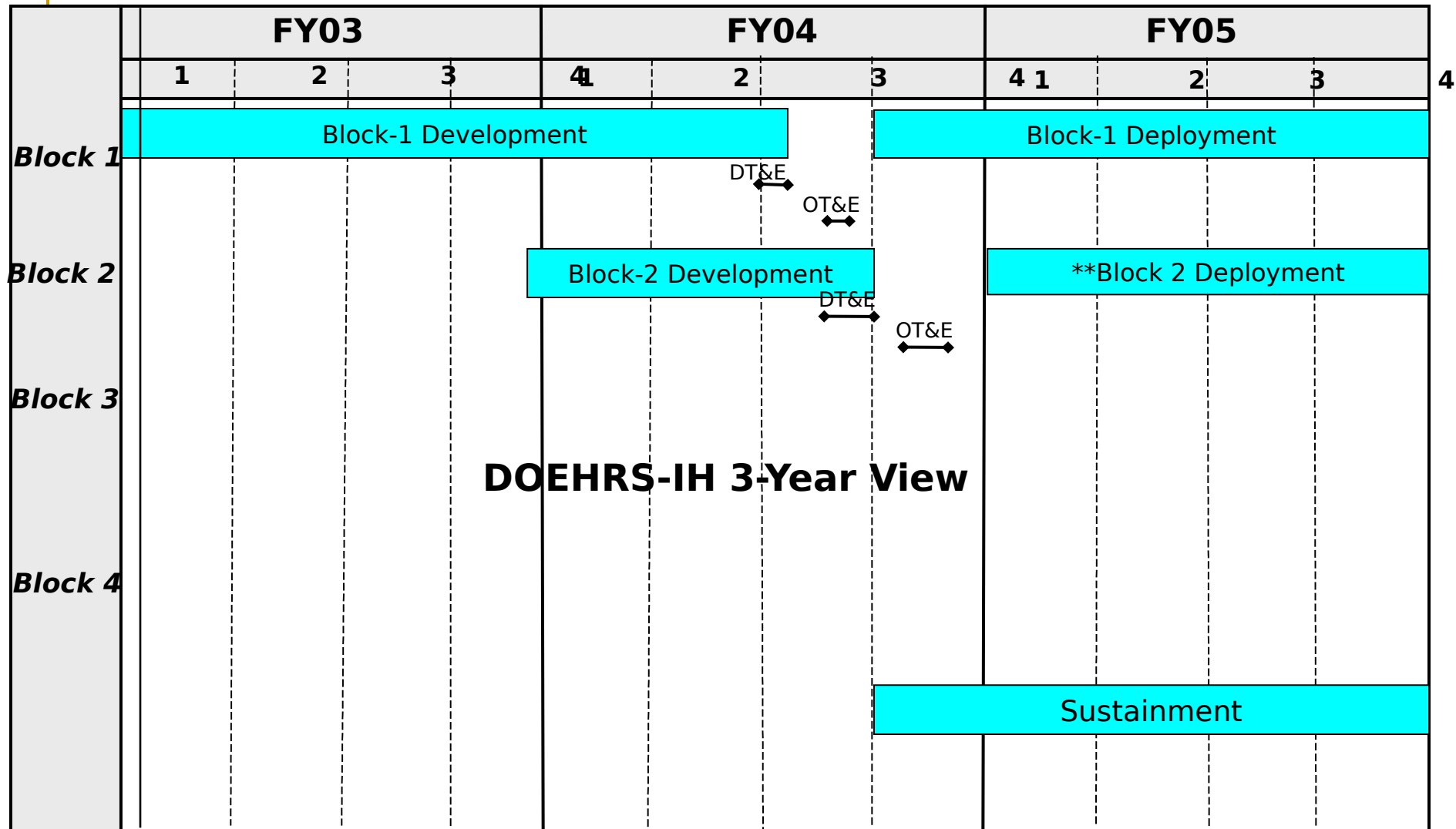
# Current Or Historical Assessments To Health Care Providers

- **DOEHRS** will provide a summary of individual and/or group exposures to allow the health care provider to effectively identify and manage medical surveillance requirements.



# Force Health Protection Capabilities

- Mobile capability – ability to collect data without an Internet connection.
  - Remote bases/installations
  - Ships/deployment areas
  - Emergency/disaster locations
- Interface with HAZMAT tracking systems - Identification of hazardous materials, their issue amounts and storage locations
  - Assists with FHP vulnerability assessment
  - Provides data for risk assessment and modeling scenarios during response to hazardous materials incidents.



\*\*FY05 UFR, POMed in FY06 as well

BLOCK 3 (Corporate Reporting) POMed for in FY06

# Summary

- DOEHRS will be a world class occupational exposure database system
- It supports data collection in the field and subsequent data mining efforts.
- It provides the longitudinal exposure record for DoD employees based on individual and grouped exposures.
- The majority of DOEHRS capabilities will be added into the Theater Medical Information Program, an integrated suite of medical information systems that provide automated information management support in deployed environments.

# Questions



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# Backup Slides

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# Functionality Allocation

*implementation of a DoD business process re-engineering effort - DoD Exposure*

## *Assessment Model*

### Block 1

*Mission essential data capture and reporting capability for Industrial Hygiene.*

- Web application
- Support for detached mode of operation
- Identification of personnel at risk
- Documentation of shops and processes
- Hazardous materials in use
- Compliance checklists
- Ergonomics assessment tools
- Documentation of similar exposure groups
- Documentation of control measures
- Electronic sampling forms
- Capture of lab results
- Medical surveillance recommendations
- Commander's report
- IH office equipment and resource data
- Interface with Personnel Data System (DMDC)
- DoD standardized process list
- DoD standardized hazards list
- DoD standardized controls list
- DoD standardized analytical methods list

### Block 2

*Expanded data collection capability - preventive medicine requirements, radiation requirements, and costing data*

- Level 2 ergonomic assessment tools
- Radiation dose and stay time calculations
- Preventive Med data capture - base camp, food service, vectors
- Interface with the Hazardous Substance Management System (HSMS)
- Interface with laboratory information systems
- Interface with Consolidated Health Care System II
- Interface with the DOEHRS - data repository
- Export for Graphical Information System (GIS)

### Block 3

*Corporate level reporting and data marts*

- Longitudinal exposure record
- Automated performance measures
- Support for data mining - Gulf War like questions
- Support for FHP vulnerability assessment data - HAZMAT, PPE, Responders

# DoD Industrial Hygiene Program



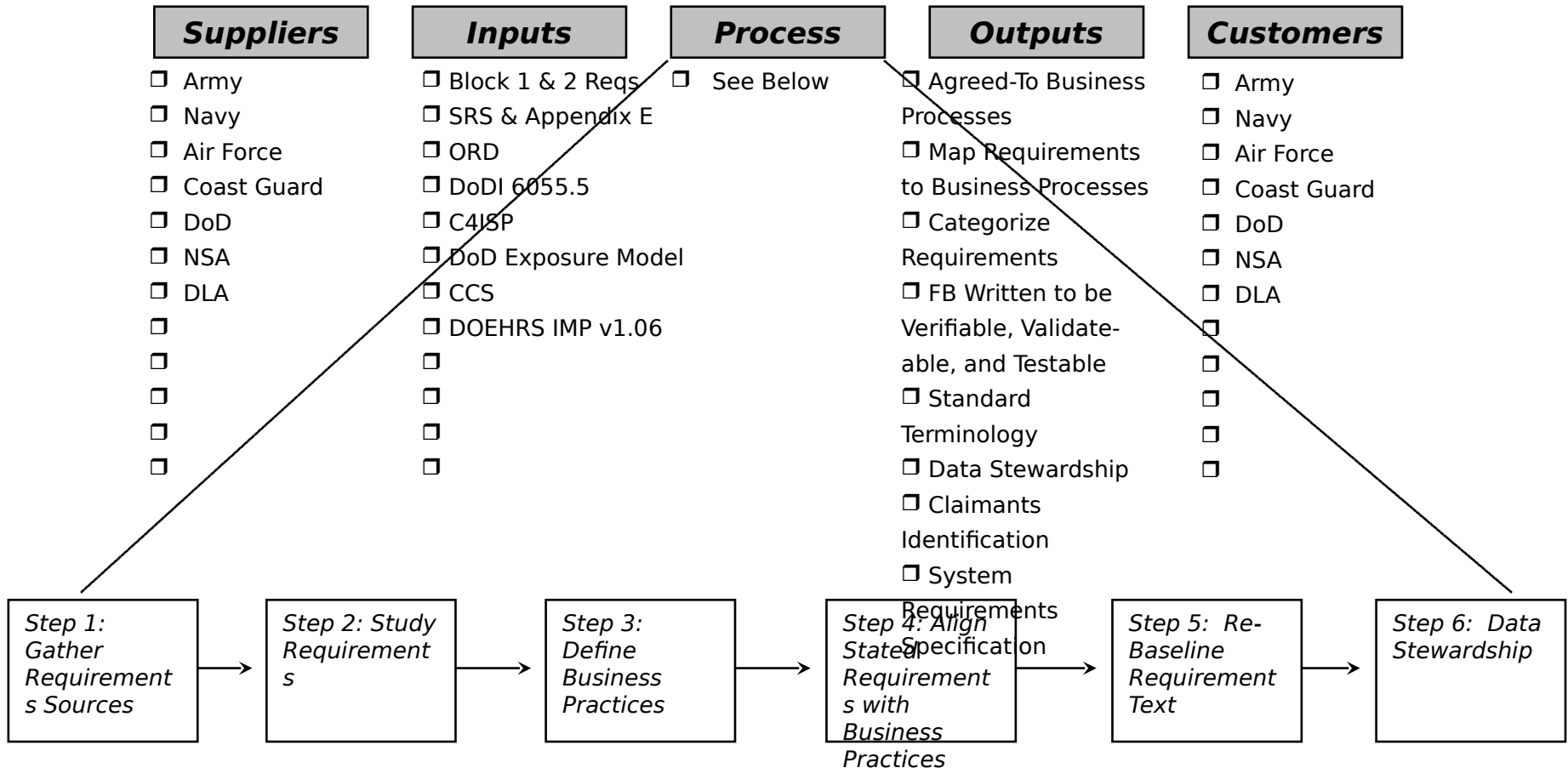
# Data Mining for Force Health Protection

- Corporate data reporting – data repository examples
  - Grouped, environmental/personal exposure data available to help answer the Gulf War like questions.
  - Number of personnel trained, fit tested, and medically approved for the use of personal protective equipment, by installation/Command, for contingency WMD incident response.
  - Type of PPE on hand, by Command, for process – “response to WMD incident”
  - Type and quantity of IH monitoring and detection equipment on hand per IH Program Office for exposure assessment purposes including WMD incident response

# Progress

- Conducted 6 Joint Application Design Sessions with Tri-Services, Coast Guard, Corps of Engineers as well as weekly teleconference with functionals to ensure product is acceptable to stakeholders
- Tri-Service accepted Web-Based Prototype available on the web
- Coordinating Reuse by TMIP Office to be their BLOCK 2 ESOH solution
- Coordinating potential reuse by DoE, DoC, DoA, CDC (NIOSH) and DoL (MSHA, OSHA)
- Adopting CRADA relationship with industry to synergize technical exchange and cost avoidance

# Requirements Analysis SIPOC



# MHS Force Health Protection DOEHRS helps fill the gaps

- Maintains Longitudinal Exposure Record
  - Pre-Deployment Exposure Baselines
  - Deployed Personnel - New Exposures
  - Post-Deployment Change of Duty

- Mystery Illnesses

- Provides DoD Standard Record of Exposures
- Facilitates Recording of Negative Exposures
- Makes Exposure Levels Available for:

- Joint Medical Surveillance Meta-Analysis
- Clinical Relevant CPR Database



# DOEHRS Bridging the Gap

Material Authorization  
Environmental Compliance  
Inspection Checklists  
Material Consumption  
Mishap Reports  
Process Costing  
Process Documents (TO, GMP)  
Personnel Protective Equip.  
Spill Response  
Training

DOEHRS-IH

TMIP

Patient Encounter  
Patient Record  
Diagnostics  
Medical Surveillance  
Procedures  
Deployed Health  
Immunizations  
Testing/Screening  
Job Restrictions

***Reusing Line Data to Support Force Health Protection***

# DOEHRS Benefits

- Informed Decision-Making
- Program Management
- Federally-Required Health Hazard Inventory
- Control Measures
- Exposure-Based Medical Surveillance
- Sampling and Analytical Cost Reduction
- Clinic Visit Cost Reduction

**Data In**



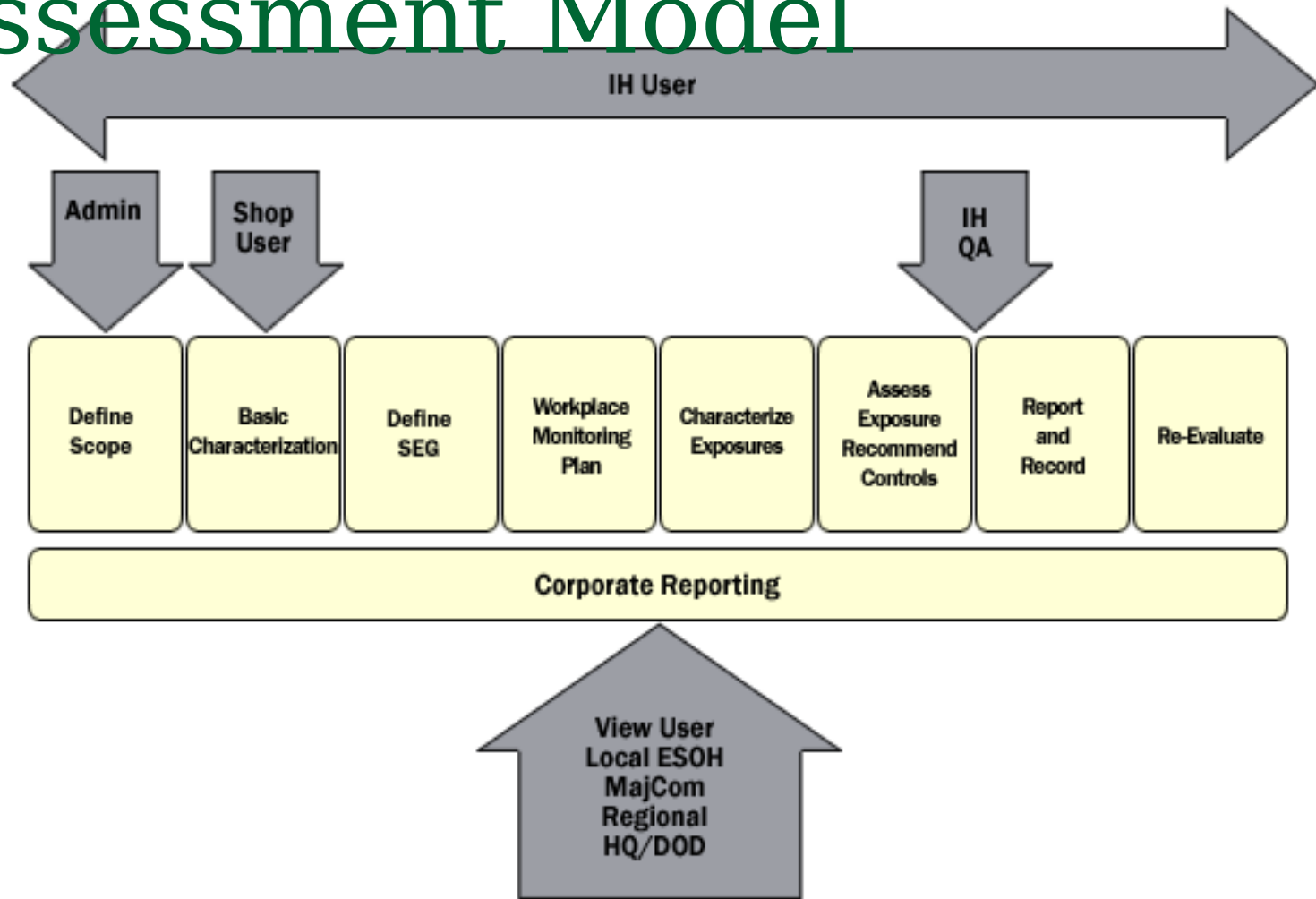
**Data Out**



# Looking Forward

- Successful Implementation
    - Service marketing and awareness
  - Employment at Joint exercises
    - Military
    - Homeland Security
  - Integration with evolving technologies
    - Future Force/Future Combat System/FORCEnet
    - Global Information Grid
    - Global Combat Support Systems
    - Interface with real-time data collection technologies
      - Fixed
      - Mobile (GPS based exposure profile)
        - Vehicle
        - personnel
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# DoD IH Exposure Assessment Model



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# Positive Operational Impact Of DOEHRS On Readiness

- DOEHRS is the management tool delivering the best operational risk management (ORM) advice to ensure personnel are healthy, fit, and ready for operational missions.
  - DOEHRS provides return on investment (ROI) by identifying means to prevent disease non-battle injury (DNBI), lost duty days, and loss of resources
  - DOEHRS improves resource projections for Industrial Hygiene operations.
  - DOEHRS provides data to assist with the prediction of medical management needs – “Health care demand management”
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# Key performance measures

- Metrics available from the data repository
  - % installations supported by Industrial Hygiene offices
  - % personnel evaluated for occupational exposures
  - % assessments greater than the established occupational exposure limit
  - Agent specific reports
  - Others.....
  - Ad-hoc capability

# Force Health Protection Requirements

- **Presidential statement, 8 November, 1997**
  - comprehensive, longitudinal exposure record.
- **Presidential Review Directive (PRD-5),**  
“Planning for Health Preparedness for and Readjustment of the Military, Veterans, and Their Families after Future Deployments”
  - Record keeping Strategy 1.1.1.
  - Meet operational needs of combatant Commanders
  - Implement an automated system for surveillance and monitoring

# The President of the United States

“Every soldier, sailor, airman and marine will have a **comprehensive, life-long medical record** of all illnesses and injuries they suffer, the care and inoculations they receive and **their exposure to different hazards.** These records will help us **prevent** illness and identify and cure those that occur.”

# Theatre Medical Information Program (TMIP)

- DOEHS is the solution for TMIP with respect to exposure data collection and storage.
  - Industrial hygiene
  - Environmental Health
  - Radiation Protection
  - Integration with future soldier mounted sensors??
- TMIP is the medical component of both the Global Command and Control System and the Global Combat Support System. TMIP's Medical Surveillance System monitors medical treatment data to detect disease outbreaks and injury trends among deployed service members.